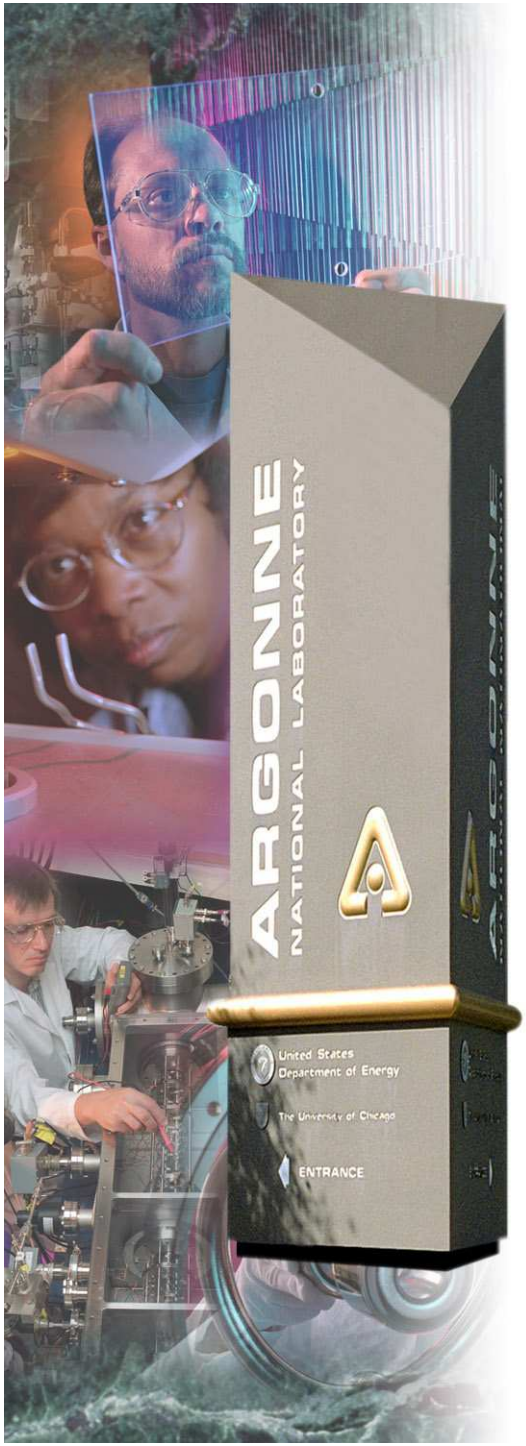

IRMIS/Relational Database Workshop

Argonne National Laboratory
D. Dohan, June 12, 2006

Argonne National Laboratory

Office of Science
U.S. Department of Energy

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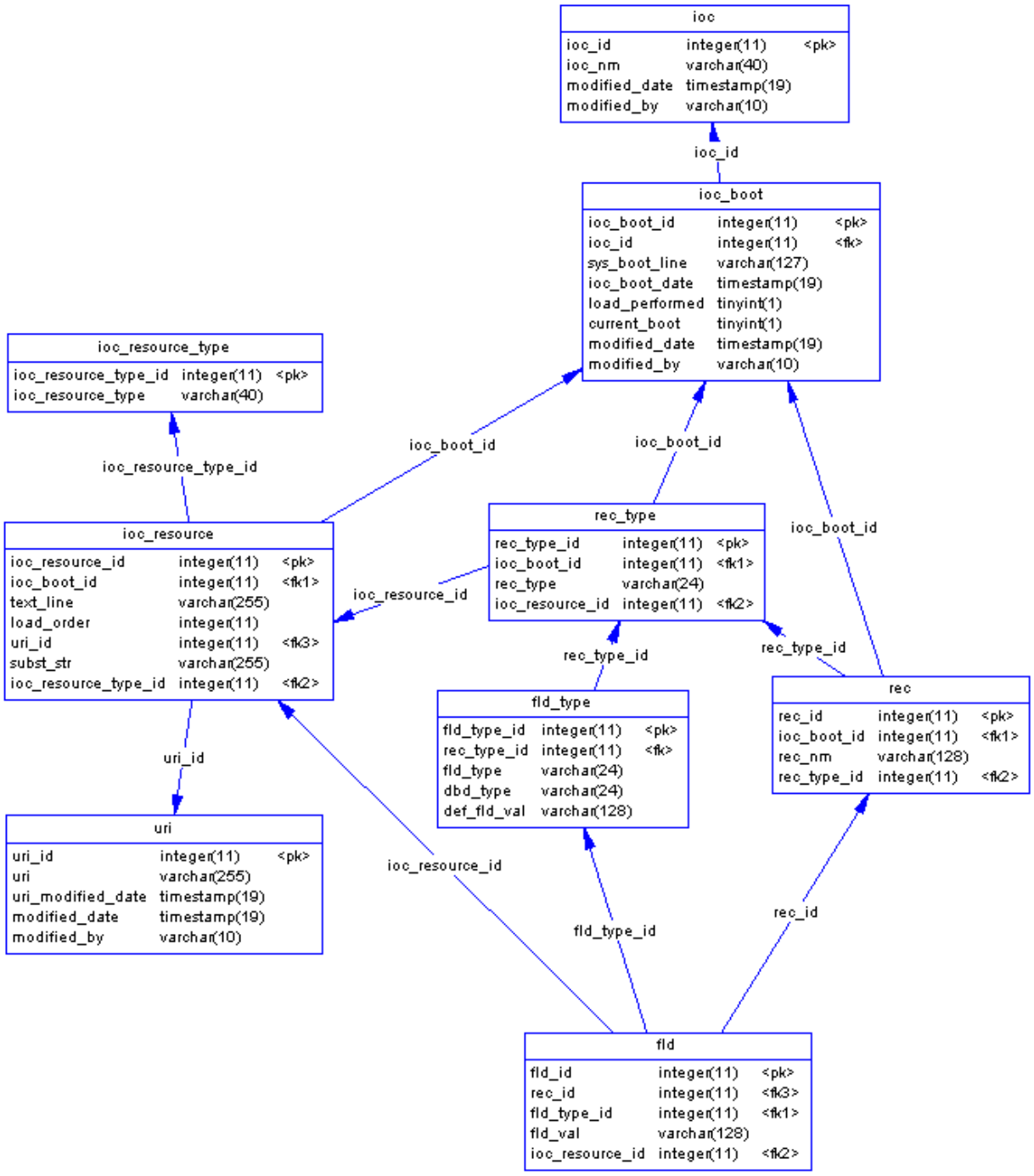
IRMIS - Introduction

- **I**ntegrated **R**elational **M**odel of **I**nstalled **S**ystems
  - 'connection-based' approach to modeling the accelerator and its control system
    - *integrated 'system' coverage of software, hardware and cabling*
- **The IRMIS Software Core components:**
  - a relational database schema
  - a crawler to populate the RDB
  - a set of channel access client crawlers
- **IRMIS extensions**
  - a variety of applications to query and view the facility control system

PV Schema

- crawler populates RDB (off-line) from ioc st.cmd information (emulate OS ioc load)
  - ✓ insists on a certain discipline in ioc s/w organization
- full (cross-IOC, soft IOC) coverage. Allows viewing system-wide control system logic.
- time stamp - allows retrieval of prior EPICS database sets
- time stamped record definitions (eg if dbd changed at a certain point)
- channel access clients (more on this later)
- no type-specific code or schema structures
  - ✓ the crawler 'discovers' new record types from the installed EPICS database
- invites sending IRMIS query sets to VDCT < nonIOC centric > to analyzed cross-IOC logic.

PV Schema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ioc_id integer(11) <pk>
ioc_nm varchar(40)
modified_date timestamp(19)
modified_by varchar(10)
ioc_id
ioc_boot
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ioc_id integer(11) <fk>
sys_boot_line varchar(127)
ioc_boot_date timestamp(19)
load_performed tinyint(1)
current_boot tinyint(1)
modified_date timestamp(19)
modified_by varchar(10)
ioc_resource_type
ioc_resource_type_id integer(11) <pk>
ioc_resource_type varchar(40)
ioc_resource_type_id
ioc_boot_id
ioc_boot_id
ioc_boot_id
ioc_resource
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ioc_boot_id integer(11) <fk1>
text_line varchar(255)
load_order integer(11)
uri_id integer(11) <fk3>
subst_str varchar(255)
ioc_resource_type_id integer(11) <fk2>
ioc_resource_id
rec_type
rec_type_id integer(11) <pk>
ioc_boot_id integer(11) <fk1>
rec_type varchar(24)
ioc_resource_id integer(11) <fk2>
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rec_type_id
fld_type
fld_type_id integer(11) <pk>
rec_type_id integer(11) <fk>
fld_type varchar(24)
dbd_type varchar(24)
def_fld_val varchar(128)
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ioc_boot_id integer(11) <fk1>
rec_nm varchar(128)
rec_type_id integer(11) <fk2>
uri_id
uri
uri_id integer(11) <pk>
uri varchar(255)
uri_modified_date timestamp(19)
modified_date timestamp(19)
modified_by varchar(10)
ioc_resource_id
fld_type_id
rec_id
fld
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rec_id integer(11) <fk3>
fld_type_id integer(11) <fk1>
fld_val varchar(128)
ioc_resource_id integer(11) <fk2>